Meteorological record of voluntary observers and army post surgeons—October, 1884.

Station.	Temperature Mean.	Maximum.	Minimum.	Rainfall.
Orono, Me	45.3	78	23	2.70
Cornish, Me	49.6	78	26	3.56
Gardiner, Me	48.2	74	28	3.14
Antrim, N. H	.....	.....	.....	2.55
Weir's Bridge, N. H	.....	.....	.....	2.42
Lake Village, N. H	.....	.....	.....	2.18
Bristol, N. H	.....	.....	.....	2.32
Ashland, N. H	.....	.....	.....	2.79
Woodstock, N. H	.....	.....	.....	4.08
Belmont, N. H	.....	.....	.....	2.52
Wolfborough, N. H	.....	.....	.....	2.63
Charlotte, Vt	48.2	72	29	4.10
Burlington, Vt	48.7	75	29	3.82
Woodstock, Vt	45.9	74	25	2.04
Dorset, Vt	46.4	76	22	4.69
Lunenburg, Vt	43.6	70	25	5.00
Newport, Vt	46.0	76	28	5.88
Strafford, Vt	46.2	74	26	1.70
Williamstown, Mass	49.4	73	25	2.98
Dudley, Mass	.....	80	25	1.03
Mendon, Mass	51.1	78	29	.....
Milton, Mass	48.8	78	32	2.98
New Bedford, Mass	52.1	78	29	1.61
Somerset, Mass	54.2	86	24	2.10
Princeton, Mass	47.0	78	23	2.99
Westborough, Mass	51.6	82	26	2.38
Taunton, Mass	52.8	86	26	2.55
Heath, Mass	.....	.....	74	22
Rowe, Mass	46.1	74	28	3.02
Fall River, Mass	51.4	79	27	2.17
Worcester, Mass	48.7	76	27	2.34
Providence, R. I	53.0	81	28	2.73
Nyatt Point, R. I	.....	85	32	4.60
Hartford, Conn	50.8	81	24	2.88
Southington, Conn	50.7	80	28	2.85
Bethel, Conn	.....	.....	.....	3.20
Voluntown, Conn	.....	84	28	0.90
Fort Hamilton, N. Y	57.6	89	30	3.41
Mountainville, N. Y	52.2	84	20	3.48
Palermo, N. Y	47.8	79	22	2.65
Auburn, N. Y	51.6	77	32	3.38
Humphrey, N. Y	48.1	79	24	3.93
Menand, N. Y	51.4	76	31	3.00
Ithaca, N. Y	50.9	83	22	2.95
Penn Yan, N. Y	.....	.....	.....	1.52
Cooperstown, N. Y	48.3	77	24	3.31
North Volney, N. Y	50.2	80	24	3.00
Port Jervis, N. Y	48.7	82	30	2.29
Factoryville, N. Y	49.6	80	22	2.80
White Plains, N. Y	55.2	85	25	3.60
Fort Niagara, N. Y	52.6	81	25	0.85
Fort Columbus, N. Y	56.4	84	31	3.36
Madison Barracks, N. Y	49.9	79	19	2.63
Plattsburg Barracks, N.Y.	47.6	79	26	2.42
David's Island, N. Y	60.0	85	18	4.45
Phillipsburg, N. J	55.6	68	31	1.58
Somerville, N. J	54.3	82	28	2.92
Readington, N. J	59.8	90	32	3.40
Vineland, N. J	58.2	89	26	0.80
Moorestown, N. J	55.4	83	30	2.29
Belvidere, N. J	.....	76	39	2.95
South Orange, N. J	54.2	82	32	2.90
Salem, N. J	.....	85	37	1.34
Wellsborough, Pa	51.2	82	28	3.02
Fallsington, Pa	54.6	81	31	2.30
Leetsdale, Pa	48.3	75	23	2.28
Grampian Hills, Pa	51.7	80	22	3.76
Drifton, Pa	49.4	81	22	2.67
Wilkesbarre, Pa	51.6	82	23	3.16
Troy, Pa	48.1	82	17	2.07
Easton (Lafayette Col.), Pa	56.2	97	30	.....
Dyberry, Pa	49.0	76	22	2.34
Catawissa, Pa	55.0	82	28	3.09
Westchester, Pa	54.6	83	28	2.56
Easton, Pa	.....	.....	.....	3.96
Altoona, Pa	57.4	84	26	1.63
Germantown, Pa	.....	80	31	2.22
Tamaqua, Pa	55.6	85	32	2.24
Chambersburg, Pa	53.5	84	30	2.27
Franklin, Pa	47.2	80	20	3.08
Haverford College, Pa	.....	82	30	2.24
Delingersville, Pa	51.6	80	22	.....
State College, Pa	.....	80	23	.....
Cumberland, Md	56.8	84	24	1.98
McDonogh School, Md	.....	87	28	1.64
Emmitsburg, Md	54.6	86	31	1.55
Woodstock, Md	55.5	87	28	1.45
Fallston, Md	56.4	88	29	1.48
Great Falls, Md	59.0	90	28	1.73
Fort McHenry, Md	58.7	85	32	0.98
Dale Enterprise, Va	59.2	92	26	0.91
Wytheville, Va	58.4	86	25	0.86
Variety Mills, Va	59.1	91	25	0.96
Accotink, Va	61.1	93	31	1.42
Blacksburg, Va	.....	88	23	0.84
Fort Monroe, Va	64.9	89	38	0.20
Snowville, Va	.....	84	26	.....
Marion, Va	58.5	88	24	1.10
Summit, Va	60.8	93	26	.....
Johnsonton, Va	66.7	94	37	trace

Station.	Temperature Mean.	Maximum.	Minimum.	Rainfall.
Washington Aqued't, D.C	62.7	92	32	.....
Distributing Res'r, D. C.	61.2	89	34	1.62
West Washington, D. C.	.....	.....	.....	1.53
Kelleys, N. C	66.9	91	30	0.00
Lenoir, N. C	.....	88	30	0.70
Lincolnton, N. C	62.3	83	42	0.99
Raleigh, N. C	70.0	93	42	0.50
Flat Rock, N. C	58.9	84	30	0.53
Statesville, N. C	67.1	91	34	0.92
Weldon, N. C	63.7	95	33	1.05
Chapel Hill, N. C	65.2	100	30	0.83
Brevard, N. C	59.9	92	25	0.79
Stateburg, S. C	65.0	94	30	0.02
Milledgeville, Ga	.....	94	35	0.69
Andersonville, Ga	49.5	72	30	trace
Forsyth, Ga	73.8	100	38	0.10
Athens, Ga	67.1	94	30	0.51
Quitman, Ga	.....	95	44	0.40
Manatee, Fla	78.9	84	61	3.66
Archer, Fla	73.9	91	51	0.29
Mayport, Fla	76.5	87	61	3.51
Tallahassee, Fla	68.5	94	44	.....
Limona, Fla	74.3	93	52	0.96
Saint Augustine, Fla	73.4	80	53	1.05
Green Springs, Ala	68.4	93	34	2.41
Mt. Vernon B'ks, Ala	74.1	98	30	5.76
Birmingham, Ala	.....	92	30	.....
Point Pleasant, La	68.6	92	39	0.44
Liberty Hill, La	.....	87	40	.....
Luling, La	.....	90	48	6.26
Grand Coteau, La	72.5	89	46	3.81
Monroe, La	67.8	92	38	0.67
Lake Providence, La	68.2	96	26	0.60
Delta, La	65.7	92	28	0.85
Saint Joseph, La	68.0	92	41	1.50
Vidalia, La	71.7	93	43	1.18
Minden, La	68.5	95	41	1.02
Nachitoches, La	68.7	88	45	1.90
Alexandria, La	70.0	94	44	3.45
Cheneyville, La	70.2	91	41	3.25
Red River Landing, La	69.9	91	43	3.84
Whiteville, La	71.0	91	44	0.70
Opelousas, La	71.8	91	45	2.59
La Fayette, La	71.8	91	45	4.10
New Iberia, La	74.5	97	48	6.55
Franklin, La	.....	.....	.....	7.90
Thibodeaux, La	72.5	90	45	6.12
Donaldsonville, La	71.6	91	40	2.80
Baton Rouge, La	70.6	92	44	2.70
Clinton, La	71.0	92	42	3.99
Amite City, La	72.0	96	41	5.02
Point a la Hache, La	73.9	90	51	6.30
Port Eads, La	76.9	87	61	7.35
Cleburne, Tex	65.7	89	41	2.01
New Ulm, Tex	69.5	90	50	1.78
Clarksville, Tex	67.3	90	45	1.45
Fort Concho, Tex	67.1	95	42	4.16
Austin, Tex	70.8	88	50	2.63
Mount Ida, Ark	63.0	89	32	0.70
Lead Hill, Ark	63.2	97	31	0.94
Fayetteville, Ark	.....	85	32	2.17
Wellsburg, W. Va	.....	.....	.....	3.20
Helvetia, W. Va	50.4	88	26	2.45
Milan, Tenn	62.3	93	27	2.82
Austin, Tenn	65.7	94	30	2.71
Ashwood, Tenn	61.0	94	28	2.40
Richmond, Ky	60.0	88	30	2.29
Frankfort, Ky	60.2	89	27	1.64
Ruggles, Ohio	53.6	84	33	1.45
Cincinnati, Ohio	61.0	92	29	1.25
Margaretta, Ohio	59.5	83	31	1.00
Jacksonburg, Ohio	57.8	95	28	1.15
Quaker City, Ohio	58.2	82	20	1.91
Hiram, Ohio	52.7	82	29	2.83
New Athens, Ohio	55.0	83	25	2.39
Canton, Ohio	53.3	85	24	2.59
Cleveland, Ohio	55.1	82	30	1.87
Westerville, Ohio	53.9	86	23	1.20
North Lewisburg, Ohio	60.5	87	25	1.05
Warren, Ohio	52.7	83	23	2.71
College Hill, Ohio	62.3	96	41	2.70
Wooster, Ohio	54.6	86	22	1.48
Wauseon, Ohio	53.2	88	18	3.01
Portsmouth, Ohio	58.1	89	26	1.22
Garrettsville, Ohio	53.6	86	29	2.56
Oberlin, Ohio	53.4	83	20	1.24
Dayton, Ohio	57.6	86	24	1.17
New Bremen, Ohio	57.8	86	26	1.19
Sidney, Ohio	54.2	88	22	1.83
Junction, Ohio	52.6	85	22	5.14
Lebanon, Ohio	59.4	91	24	1.51
Levering, Ohio	53.1	86	22	1.73
Gambier, Ohio	52.6	82	23	2.47
Ironton, Ohio	60.1	99	19	1.44
Washington C. H., Ohio	57.9	91	23	1.78
Waverly, Ohio	58.0	90	23	1.05
Logan, Ohio	58.7	93	18	2.73
Marietta, Ohio	57.5	89	26	1.17
McConnelsville, Ohio	55.0	92	22	1.13
Pomeroy, Ohio	60.4	88	23	1.15

Station.	Temperature Mean.	Maximum.	Minimum.	Rainfall.
Granville, Ohio	56.9	87	24	1.23
Lafayette, Ind	52.5	86	25	2.54
Fort Wayne, Ind	56 0	93	30	3.40
Logansport, Ind	59.2	90	30	3.26
Laconia, Ind	60.5	89	27	2.00
Terre Haute, Ind	.....	81	30	1.59
Sunman, Ind	57.0	86	24	1.04
Jeffersonville, Ind	60.6	88	28	1.81
Spiceland, Ind	55.9	89	24	1.81
Vevay, Ind	62.3	90	27	0.95
Wabash, Ind	56.7	83	31	3.75
Monticello, Ind	56.6	84	33	4.82
Farnkfort, Ind	54.9	80	32	3.88
Connersville, Ind	55.3	87	28	2.08
Noblesville, Ind	57.8	81	32	2.97
Greenfield, Ind	55.6	87	30	.....
Franklin, Ind	56.2	89	30	1.62
Martinsville, Ind	55.7	89	24	1.07
Fillmore, Ind	.....	.....	.....	1.30
Farmland, Ind	56.2	86	30	0.73
Mauzy, Ind	50.8	84	27	2.67
Romney, Ind	55 9	87	21	4.67
Dana, Ind	55.8	91	32	3.73
Richmond, Ind	56.0	89	28	1.91
Columbus, Ind	59.1	95	27	2.19
Blue Lick, Ind	61.4	90	31	2.31
Huntingburg, Ind	62.0	87	30	1.87
Princeton, Ind	58.2	90	28	1.60
Worthington, Ind	58.1	86	25	1.82
Bloomington, Ind	58.1	86	25	.....
Degonia Springs, Ind	60.5	90	28	2.21
Salem, Ind	58.7	87	25	1.29
Corydon, Ind	61.0	89	24	1.10
Mitchell, Ind	59.0	92	29	.....
Tipton, Ind	53.7	94	32	.....
Mattoon, Ill	57.0	93	30	2.80
Sycamore, Ill	51.3	82	22	5.76
Sandwich, Ill	55.1	84	29	4.95
Wilton Centre, Ill	54.9	87	25	5.45
Peoria, Ill	59.1	90	29	4.80
Collinsville, Ill	60.4	87	32	1.64
Anna, Ill	64.6	89	32	1.42
Rockford, Ill	53.2	83	26	6.24
Riley, Ill	51.5	81	24	3.85
Mascoutah, Ill	64.2	90	33	1.91
Hudson, Mich	53.1	86	21	3.68
Hillsdale, Mich	.....	83	23	3.48
Ionia, Mich	50.6	83	25	4.30
Marshall, Mich	.....	84	32	3.07
Northport, Mich	.....	80	30	1.24
Traverse City, Mich	.....	81	26	5.74
Kalamazoo, Mich	.....	81	32	2.88
Thornville, Mich	53.1	84	27	5.34
Fort Brady, Mich	46.6	76	18	4.35
Lansing, Mich	53.5	85	27	6.91
Manitowoc, Wis	51.3	84	24	5.03
Wausau, Wis	47.7	80	20	4.31
Embarras, Wis	51.7	85	25	7.85
Sussex, Wis	50.9	82	24	3.01
Franklin, Wis	.....	.....	.....	4.24
Beloit, Wis	52.0	84	24	3.96
Neillsville, Wis	43.7	74	13	4.00
Lancaster, Wis	.....	84	17	3.35
Madison, Wis	51.5	80	26	4.60
Prairie du Chien, Wis	51.8	86	25	2.80
Minneapolis, Minn	48.4	90	18	3.08
Northfield, Minn	49.3	82	18	3.45
Fort Snelling, Minn	49.5	85	19	2.37
Chester, Minn	.....	82	17	3.47
Monticello, Iowa	51.8	85	17	3.19
Des Moines (near) Iowa	55.7	87	21	.....
Independence, Iowa	.....	78	26	2.10
Ottumwa, Iowa	50.7	91	27	5.54
Manchester, Iowa	53.6	85	24	2.48
Logan, Iowa	53.7	83	28	4.40
Ranch Grove, Iowa	.....	86	28	.....
Oskaloosa, Iowa	.....	85	22	.....
Cresco, Iowa	49.0	83	17	2.83
Cedar Rapids, Iowa	.....	86	24	.....
Fort Madison, Iowa	.....	85	27	5.40
Guttenberg, Iowa	52.2	88	22	2.78
Muscatine, Iowa	55.8	87	24	6.46
Maynard, Iowa	47.6	81	16	.....
Humboldt, Iowa	49.6	84	18	3.96
Mount Vernon, Iowa	56.9	87	29	.....
De Soto, Nebr	54.7	88	25	4.52
Fremont, Nebr	48.7	83	25	2.72
Genoa, Nebr	54.8	86	24	2.80
Tecumseh, Nebr	62.3	88	32	3.03
Crete, Nebr	55.7	85	26	3.80
Marquette, Nebr	.....	83	35	2.17
Fort Robinson, Nebr	53.6	87	14	0.34
Red Willow, Nebr	57.0	88	20	0.73
Stockham, Nebr	68.4	88	46	2.35
Falls City, Nebr	59.2	.....	.....	2.27
Syracuse, Nebr	58.4	.....	.....	2.40
Weeping Water, Nebr	56.5	.....	.....	1.74
Central City, Nebr	54.8	.....	.....	2.50
DeWitt, Nebr	56.1	.....	.....	2.50

Station.	Temperature Mean.	Maximum.	Minimum.	Rainfall.
Stromsburg, Nebr	56.2	.....	.....	2.64
Table Rock, Nebr	55.7	.....	.....	2.30
Superior, Nebr	58.7	.....	.....	1.74
Sargent, Nebr	50.9	.....	.....	0.32
Neligh, Nebr	50.2	.....	.....	1.27
Ashland, Nebr	.....	.....	.....	6.05
Keen, Nebr	65.2	.....	.....	2.45
Beaver Creek, Nebr	64.5	.....	.....	1.38
Fairbury, Nebr	64.0	.....	.....	2.26
York, Nebr	60.5	.....	.....	3.43
Conception, Mo	56.8	83	29	2.92
Carthage, Mo	62.1	87	35	.....
Greenfield, Mo	61.0	92	30	2.50
Springfield, Mo	59.9	96	30	1.73
Centreville, Mo	.....	92	18	0.43
Chamois, Mo	60.9	89	30	1.84
Dresden, Mo	58.2	89	26	3.85
Glasgow, Mo	58.5	87	30	4.85
Ironton, Mo	59.5	90	33	0.95
Kirkville, Mo	50.9	88	24	3.96
Lexington, Mo	58.3	83	33	4.50
Louisiana, Mo	57.4	86	30	1.82
Mexico, Mo	.....	86	29	1.72
Miami, Mo	60.0	.....	.....	5.09
Oregon, Mo	58.9	85	29	3.26
Pleasant Hill, Mo	.....	.....	.....	4.15
Sedalia, Mo	.....	90	29	2.81
Steelville, Mo	.....	.....	.....	1.53
Hanibal, Mo	.....	.....	.....	3.10
Phelps City, Mo	58.6	91	30	1.80
Savannah, Mo	.....	.....	.....	3.95
Saint Charles, Mo	.....	.....	.....	2.00
Shebina, Mo	.....	.....	.....	2.10
Atchison, Kans	58.7	88	30	2.90
Independence, Kans	60.8	91	32	4.22
Manhattan, Kans	59.4	90	30	2.48
Wyandotte, Kans	57.5	86	29	4.07
Salina, Kans	60.9	79	41	0.09
Yates Centre, Kans	58.8	89	31	3.83
Clay Centre, Kans	58.9	87	31	2.24
W. Leavenworth, Kans	59.0	86	32	5.00
Maud, Kans	.....	88	.....	0.78
Wellington, Kans	60.6	92	31	2.90
Allison, Kans	54.0	89	19	1.50
Lawrence, Kans	57.9	85	31	2.38
Elk Hill, Kans	.....	65	44	3.00
Holton, Kans	.....	90	26	3.12
Richardton, Dak	46.2	80	8	0.70
Fort Yates, Dak	47.7	89	11	0.39
Fort Buford, Dak	45.5	86	11	0.12
Fort Totten, Dak	42.6	85	12	69.8
Fort Sisseton, Dak	46.3	78	12	3.63
Fort Sully, Dak	53.9	90	19	1.04
Fort Randall, Dak	54.4	89	18	0.97
Fort A. Lincoln, Dak	45.9	80	10	1.20
Fort Meade, Dak	48.7	86	13	0.75
Webster, Dak	52.3	88	0	5.09
Vermilion, Dak	.....	89	20	2.18
Pueblo, Colo	54.2	80	23	trace
Fort Lewis, Colo	46.3	70	20	2.10
Fort Lyon, Colo	57.2	89	27	0.79
Fort Lowell, Ariz	70.9	98	41	1.22
Tucson, Ariz	.....	.....	.....	2.24
Fort Keogh, Mont	48.1	87	11	0.14
Fort Ellis, Mont	44.5	81	18	1.38
Fort Shaw, Mont	47.7	80	21	0.39
Fort Assinaboine, Mont	47.1	85	10	0.41
Fort Fred Steele, Wyo	45.3	76	9	0.68
Fort Bridger, Wyo	42.7	75	15	0.13
Puerto de Luna, N. Mex	58.7	.....	.....	1.04
Fort Wingate, N. Mex	53.4	76	24	1.66
Nephi, Utah	46.1	77	22	2.05
Carson City, Nev	48.6	77	22	0.22
Fort McDermit, Nev	46.3	77	25	1.05
Poway, Cal	59.5	87	41	0.24
Fall Brook, Cal	60.1	92	40	0.53
Cahuenga Valley, Cal	.....	.....	.....	0.51
Princeton, Cal	63.0	84	44	1.10
Salinas, Cal	50.6	84	57	1.79
Oakland, Cal	56.4	75	41	2.80
College City, Cal	61.7	86	48	0.29
Sacramento, Cal	56.8	80	37	1.85
Alcatraz Island, Cal	55.2	68	47	0.97
Angel Island, Cal	58.0	83	47	2.71
Benicia Barracks, Cal	60.4	78	47	1.07
Fort Bidwell, Cal	52.4	78	25	0.73
Fort Gaston, Cal	54.0	76	34	1.08
Presidio of S. F., Cal	55.2	77	43	2.18
Fort Mason, Cal	58.2	70	47	0.94
Eola, Oreg	51.4	68	37	2.80
Brandon, Oreg	.....	.....	.....	3.12
Albany, Oreg	52.5	72	34	2.85
East Portland, Oreg	.....	68	38	3.14
Fort Klamath, Oreg	41.6	78	11	1.22
Pleasant Grove, Wash. T	.....	70	17	0.71
Bainbridge Isl'd, Wash. T	49.0	65	33	6.20
Fort Spokane, Wash. T	46.6	71	24	1.18
Fort Townsend, Wash. T	49.8	64	33	2.14
Ainsworth, Wash. T	.....	75	34	0 56

pense. The stream has continued unabated in quantity, and is of excellent quality.

The following notes, relating to the earthquake of September 19th, were not received until after the publication of the REVIEW for that month, and show that the area affected by the shock extended about one hundred and fifty miles farther eastward than was determined from the reports previously received:

Professor Robinson of Howard University, Washington, District of Columbia, reports that he was sitting in his office writing when he felt a shock; he immediately noticed that the ink in his stand was waving, and also that one of the doors in the room just ajar thumped several times. He found on inquiry, that while several persons in the building had noticed nothing peculiar, yet one had felt the shock. He also found a lady in an adjacent building who had felt the shock, and, moreover, some workmen in the tunnel near the University had noticed the rumble and supposed it was made by a part of the wall caving in behind them. The time of the shock was, approximately, 3.20 p. m., eastern standard time.

It is also reported that the earthquake of September 19th, was felt by the workmen on the top of the Washington Monument (at that time about five hundred feet high); and by persons in upper stories of the Quartermaster's building.

SAND STORMS.

Maricopa, Arizona, 1st: during the morning the fresh westerly winds filled the air with clouds of sand and dust. At times it was impossible to see objects fifteen paces distant, and persons out of doors could breath only with difficulty. Everything in the office building was covered with sand, and telegraphic communication was interfered with on account of the fine sand working into the bearings of the instruments.

A sand-storm also occurred at Los Angeles, California on the 1st.

WATER SPOUTS.

Galveston, Texas: at about 10.30 a. m. on the 19th, a waterspout was observed east of this place, passing in a northerly direction. It moved slowly for some distance and then broke, the cloud above it assuming a common appearance.

ERRATA.

In the September REVIEW on page 227, near the bottom of the second column, the tornado published as having occurred near Alton, Pennsylvania, and moved southwestward, should read *occurred at Alton*, and *moved northeastward*.

On page 238, September REVIEW, second column, under "Water Spouts," Washington Observatory, should read Washburne Observatory. The water spout there referred to occurred on September 10th, the date having been omitted in that REVIEW.

NOTES AND EXTRACTS.

The following extract is from the October report of the "Ohio Meteorological Bureau," under direction of Professor T. C. Mendenhall:

The mean atmospheric pressure for the month does not differ materially from that of October, 1883. It was about one-tenth of an inch greater than that of the previous month, but the range was less than in September or in October, 1883.

The most noticeable feature of the weather was the unusually high temperature reported from many stations during the first few days of the month. Seven observers recorded a maximum of over 90° and the highest being 99° at Ironton, on the 1st, which is the maximum reported to the bureau from the beginning. The highest temperature reported during the year ending October 31, 1883, was 98°. The mean temperature for the month, 56°.3, was 3° higher than that for October, 1883, and 4° higher than the normal for the month.

The month was also remarkable for the small rainfall, being about two-thirds of the normal amount.

State summary.

Atmospheric pressure: mean for the state 30.14; highest barometric reading, 30.55, at Marietta, on the 15th; lowest barometric reading, 29.74, at Wauseon, on the 8th; monthly barometric range, for the state, 0.82; station reporting greatest monthly range, Wauseon, 0.80; station reporting least monthly range, Ironton, 0.43. All stations report the lowest barometric readings on the 8th, and the highest were recorded on either the 14th or 15th.

Temperature: monthly mean for the state, 56°.3; station reporting highest monthly mean, Cincinnati, 61°.3; stations reporting lowest monthly mean, Junction and Gambier, 52°.6; station reporting maximum temperature, Ironton, 99° on 1st; station reporting minimum temperature, Wauseon, 18° on 24th; monthly range of temperature for the state, 81°; station reporting greatest monthly range of temperature, Ironton, 80°; station reporting least monthly range of temperature, Cleveland, 52°.5; station reporting greatest daily range of temperature, Ironton, 48° on 16th; station reporting least daily range of temperature, Sandusky, 3°.4 on the 14th.

Relative humidity: monthly mean for the state, 75.6 per cent.; station reporting highest monthly mean, Ohio State University, 83.3 per cent.; station reporting lowest monthly mean, Cincinnati, 67.9 per cent.

Precipitation: average for the state, 1.88 inches; station reporting largest monthly rainfall, Junction, 5.14 iuches; station reporting least monthly rainfall, McConnelsville, 1.13 inches.

Wind: prevailing direction for the state, sw.

NOTE.—The above summary is based on the reports from thirty-four stations.

The following extract is from the October report of the "Alabama Weather Service," Professor P. H. Mell, director.

AGRICULTURAL AND MECHANICAL COLLEGE,
Auburn, Alabama, November 1, 1884.

The drought which began in August and extended through September, continued also through October until the last week. Streams and wells dried up, causing much suffering for man and beast, especially in northern, central, and eastern Alabama. A number of cotton gins suspended work in September for want of water power from the streams, and in this month steam gins have been inconvenienced by failing wells. The 22d was the first day of general showers; and gentle rains fell also from the 26th to the 29th. No violent rains have fallen, and the suffering for water is not yet relieved.

The precipitation along the coast was normal, but there was a gradual deficiency proceeding northward; and in northern and eastern Alabama the rainfall was below the average, two inches and upward. The precipitation for the whole state for the past three months, August, September and October, was seven inches below the normal.

The first week of the month was very warm. A number of stations report the highest temperature of the season during that period. On the 9th a "cold wave" was predicted by the Chief Signal Officer, "a fall of from fifteen to twenty degrees in twenty-four hours." This was verified with remarkable accuracy in the entire western portion of the state, and partially verified in the eastern portions as there was a fall of three or four degrees. The temperature gradually decreased from this date until the 16th when the first frost is reported. a slight frost visible only in low grounds and wet places. The temperature then rose immediately and very rapidly, all stations giving the 17th as the day of greatest range of thermometer. After the showers of the 22d a second frost occurred on the 24th and another on the 25th. Those two frosts were heavy in north Alabama; in other sections the mercury in several places fell below freezing, and the first ice of the autumn was reported. But the damage was confined principally to the low grounds, as the earth and air were still too dry to be greatly affected by the cold.

The temperature rose slowly after these frosts, and the weather remained mild and showery to the close of the month. The 27th and the 28th were the days of the least range of temperature showing it to be nearly stationary.

The average temperature of the state exceeded the normal by 40°.

No rain of importance fell until the 22d.

The "Louisiana State Weather Service," under the direction of Mr. Robert S. Day, furnishes the following report for October, 1884:

The weather continued very warm, almost at summer heat, until the 23d, when a cold wave entered the state from the northwest travelling rapidly, with a fall in temperature of 22° to 25°, as far as the Atchafalaya, east of which it traveled less rapidly, a drop of 16° to 20° being established on the 24th. The greatest cold prevailed in the northeastern parishes, frost being general in that section, and vegetation being killed or checked. Below New Orleans the wave was but little felt, reporting 61° at Port Eads as lowest point. In the southwest portion of the state warm weather returned on the 26th and 27th, with easterly winds and rain, but this weather appears to have been confined to the Gulf shore and lower swamp country. Elsewhere the cool weather prevailed. High winds have been general. Good rains have fallen in the southern portion of the state, but the northern parishes are still far below the average.

State summary.

Mean temperature for October, 1884, 70°.8; highest temperature, Franklin, 7th and 8th, 99°.0; lowest temperature, Delta, 24th, 28°.0; greatest daily range. Delta, 19th, 46°.8; least daily range, Vidalia, 9th and 10th, 1°.0.

Average rainfall, 3.61 inches; greatest daily rainfall, 5.81 inches, New Iberia, 26th; greatest rainfall for month, 7.90 inches, Franklin; rainfall since January 1st, 48.87; average rainy days, 5.

Light frost at Delta, 24th. Very high northerly winds on the 9th, 10th, 22d, 25th.

Lunar halos: Port Eads, 3d; New Orleans, 26th, 29th; Shreveport, 3d.

Thunderstorms and lightning: Port Eads, 2d, 20th. 21st, 27th. Lightning observed at Port Eads, 6th, 11th, 12th, 18th, 22d, 23d. Port Eads, strong winds 1st, 3d, 5th, 21st, 26th, 30th; squall and light gale on 4th, 20th, 24th. These winds ranged from northeast to southeast.

Thunderstorm: New Orleans, 2d, 21st, 26th.

Lightning: New Iberia, 2d, 19th; very high winds 23d, 24th, 29th.